PAEDIATRIC SERVICE GUIDELINES FOR BMEC EYE ED

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Table of Contents

Paediatric Ophthalmology at SWBH **3**

Important Contacts at BMEC **4**

Referring a patient to SWBH Ophthalmology **5**

In-patient referrals from SWBH **6**

Reviewing children in Eye ED **7**

Paediatric resuscitation **8**

Admission for systemic investigations or medical treatment **9**

Ophthalmic Surgical Emergencies in children **10**

Paediatric Ophthalmology advice **11**

General principles when assessing children **12**

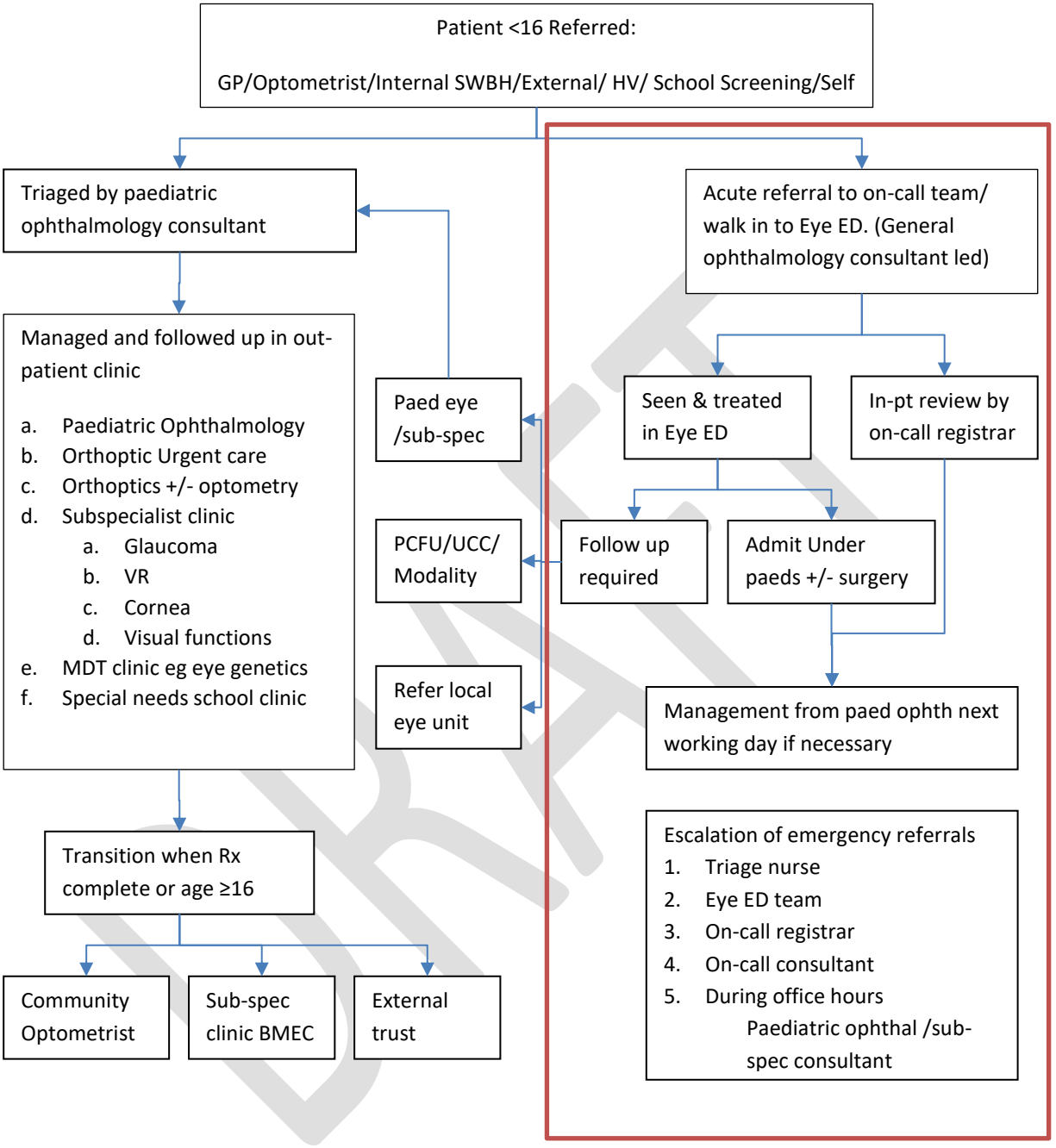
Safeguarding children **13**

Request for examination of children < 3 years with suspected Non-Accidental Injury **14**

Advice for specific conditions **16**

Management of preseptal/orbital cellulitis 16
Suspected Bilateral Disc Swelling 17
Blepharitis/Blepharokeratoconjunctivitis 188
Chalazion 18
Marginal Keratitis 19
Allergic Conjunctivitis 19
Vernal Keratoconjunctivitis 210
Uveitis 21
Acute Onset Squint 22
Medically Unexplained Visual Loss 22
General Bacterial/Viral Conjunctivitis 22
Neonatal conjunctivitis 22
Herpes Simplex Keratitis 23
Congenital Nasolacrimal duct obstruction 23
Leukocoria 233

Paediatric Ophthalmology at SWBH



Important Contacts at BMEC

Mr Abdul-Jabbar Ghauri	Paediatric Ophthalmology lead
Mr John Ainsworth	Consultant Paediatric Ophthalmologist
Miss Laura Young	Directorate Lead Nurse
Mrs Rosie Auld	Head Orthoptist
Mrs Waheeda Illahi	Head Optometrist
Mrs Emma Berrow	Visual Functions
Senior Sr Carlene Oliver	ED Nurse Manager
Sr Angela Alwright	Paediatric Day Unit Charge Nurse
Sr Jennifer Green	Paediatric ED Nurse

Referring a patient to SWBH Ophthalmology

Children and young people with ocular emergencies are seen in BMEC ED where they must be accompanied by a responsible adult. BMEC provides a walk-in eye ED service Monday to Saturday 9am to 7pm and Sunday 9am to 6pm, with all on-call cover for periods outside this time for patients presenting to general EDs across the region.

There are several clinics operating under Eye ED:

1. **Eye ED**: New or follow up patients presenting with a major eye emergency (Not booked) This is a walk in service, patients will be assessed at pre triage.
2. **BMEC Urgent Care Clinic (UCC)**: New patients presenting with an acute eye problem (Patients given a specified appointment).
3. **BMEC Primary Care Follow Up (PCFU)**: Follow up clinic for children ≤8 years or complex eye problem.
4. **Modality follow up**: Follow up clinic for children >8 years with acute self-limiting conditions

Children can be referred from a healthcare professional or self-refer as “walk-ins”.

Children presenting directly to Eye ED are assessed by the pre triage nurse and either given advice and guidance, booked into urgent care clinics or seen in the general eye ED (see above).

Referrals from a healthcare professional must first be discussed with the 2nd on-call ophthalmology registrar via SWBH switchboard (0121 554 3801). Please include a written referral with patient, once accepted by the ophthalmology registrar.

Children accepted for ophthalmology review should be booked into a specified UCC slot when appropriate. If accepted for UCC, please contact Eye ED reception (0121 507 6880).

Children will be discharged from BMEC to the referring unit following initial assessment and treatment. It is the responsibility of the referring hospital to arrange transport to and from BMEC.

Referrals out of hours must be discussed with the 2nd on-call ophthalmology registrar before sending to BMEC. Patients accepted for review out of hours are to be seen on the eye ward (1st floor BMEC). Any patient not previously accepted for review by ophthalmology will be required to attend City Hospital main ED.

Non-ambulatory children who are unable to travel to BMEC can be reviewed as inpatients by their respective ophthalmology unit during the weekdays 9am – 5pm, or by the 4th on call Ophthalmology Registrar out of hours. 4th on-call will confirm ETA with the inpatient unit. Please note the 4th on-call may not be able to review the patient immediately due to concurrent clinical responsibilities.

In-patient referrals from SWBH

Children admitted under general paediatrics at SWBH requiring a new ophthalmology assessment are to be transferred to BMEC Eye ED following discussion with the 2nd on-call ophthalmology registrar.

Whenever possible, children are to be booked into a specified UCC slot. The 11am slot in UCC (Monday to Friday) is reserved for reviews of SWBH paediatric in-patients. If this slot is unavailable and children are to be seen in the ED , they should be fast-tracked in order to minimise disruption to medication and meal times. Please note that an inpatient cannot be booked into ED (First Net) so will need, from an administrative perspective, be booked into UCC even if they are seen in ED.

Paediatric team to organise transport to and from BMEC. Prior to departure, please confirm appointment with BMEC ED reception desk (0121 507 3880).

Following initial review, children requiring ophthalmology follow up <2 weeks must be given an appointment in UCC or PCFU prior to departure from BMEC. Follow up plan including details of appointment must be clearly documented in notes.

Reviewing children in Eye ED

Children with no evidence of ocular pathology can be discharged directly from eye casualty. Children do not need to be referred to paediatric ophthalmology for reassurance.

If children require ophthalmology follow up after being seen eye ED, please discuss with the most senior doctor present prior to organising follow up or onward referral.

Children requiring follow up of a non-acute condition can be discharged to GP for referral to their local eye unit e.g. watery eye, chalazion, squint.

Acute self-limiting conditions requiring follow up in <2 weeks are to be reviewed in the PCFU or Modality Clinics e.g. infective conjunctivitis, pre-septal cellulitis, mild external eye disease, corneal abrasion.

Children with a serious condition requiring follow up need to be booked into UCC or seen in Eye ED as a casualty follow up e.g. traumatic hyphaema, commotio retinae, mild-moderate chemical injury.

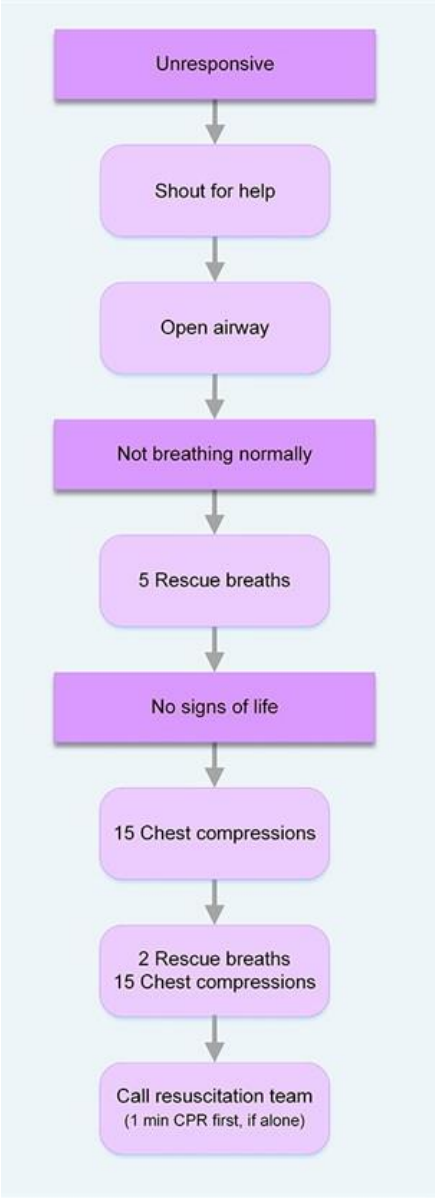
Children requiring specialist paediatric ophthalmology follow up at BMEC must have a printout of the Medisoft notes attached to the ED cover sheet and sent for the attention of the paediatric ophthalmology consultant. If an urgent paediatric ophthalmology review is required, please discuss with paediatric ophthalmology consultant (see below).

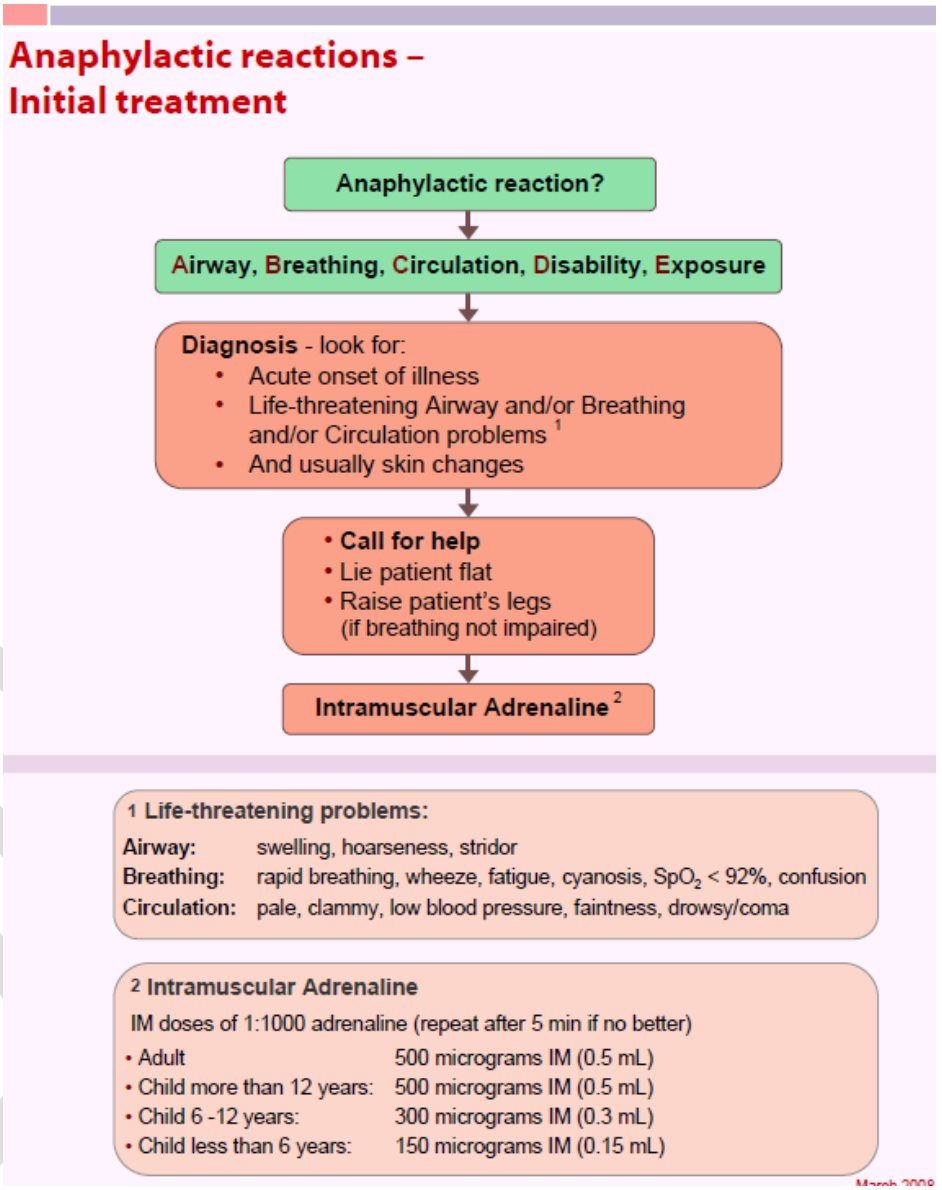
Young people ≥ 16 years age should be referred to relevant adult sub-specialty team.

Referrals to the paediatric ophthalmology service are continuously audited to facilitate training and ensure quality. Inappropriate and poorly documented referrals will be declined and fed back to the referring clinician.

Paediatric resuscitation

Dial 2222 and ask for paediatric EMRT. Specifying nature of incident and location.
Initial treatment as per Resuscitation Council guidelines (see below).





Admission for systemic investigations or medical treatment

There are no overnight inpatient facilities for children in BMEC.

Children requiring overnight admission for investigations or medical treatment can be admitted to the Paediatric Unit at Sandwell General Hospital (SGH). The Childrens Emergency and Assessment Unit (CECU) at City Hospital is an 18 hr maximum stay for surgical admissions

If in-patient admission is required, please discuss with on-call ophthalmology consultant and contact the paediatric registrar on call who can advise. Please send a copy of the ophthalmology notes including management, follow up and discharge plans to the ward along with the patient and copy the management plan from Medisoft to Unity. Please complete an inpatient prescription for ophthalmic medication on Unity prior to transfer as well, discuss with on-call paediatric registrar if assistance is needed for intravenous medication and paediatric dosing.

In-patients admitted from ophthalmology are admitted under joint care of the on-call ophthalmology consultant and general paediatrics. In-patient follow ups at SGH should be performed by the ophthalmology registrars in clinics and/or theatre at SGH. Ophthalmology care can be handed over to the paediatric ophthalmology team on the next working day if specialist paediatric ophthalmology input is required.

Ophthalmic Surgical Emergencies in children

Emergency ophthalmic surgery can be performed on children aged 1 year or above in BMEC daily between 08:00 and 17:30 in the designated emergency theatre. This may require reorganisation of elective lists. In such instances it is acceptable to move the elective cases to the evening emergency list. The anaesthetist and theatre team must inform the evening on-call BMEC anaesthetist explaining the arrangement. Outside of these hours, surgery will have to be performed in Windmill theatres in City hospital.

When organising emergency theatre, please contact the on-call ophthalmology and anaesthetic consultants, ophthalmology theatre team, nursing team and complete the appropriate booking form in BMEC theatres.

Children can only be admitted in the BMEC paediatric day unit for day case procedures on Mon and Thursday 8am-6pm. At all other times, children will require admission onto the CECU at City Hospital (following discussion with paediatric on call registrar) prior to surgery where a bed must remain available for recovery after surgery.

Children less than 1 year old can be admitted at Birmingham Children's' Hospital if emergency surgery is to take place between Monday-Friday. Please discuss with on-call ophthalmology consultant if a child less than 1 year old requires emergency ocular surgery, they will then need to liaise with the Ophthalmology Consultants at BCH via the Lead Orthoptist on 0121 3339467.

If a child is admitted to CECU preoperatively, post recovery the child will be transferred back to ECAU. The child must be transferred using the hospital transport service, available between 08.00-20.00 (outside of these hours ambulance required). Under no circumstances is it acceptable to walk the child back to CECU or allow the parent or the staff to carry the child back to CECU.
The anaesthetist must always accompany the child to CECU and handover to the nursing staff. It is currently not acceptable to send the ODP's or any other member of the staff, unaccompanied by an anaesthetist for transfer.

On occasion, for clinical need (high risk cases) it might be more appropriate to perform the emergency case in Windmill emergency theatres instead of BMEC theatres. It is important that the Anaesthetic and Surgical consultant have a thorough discussion and risk assess prior to taking the decision. Emergency eye cases done in Windmill theatres must be booked on the emergency list as per the theatre protocol. The anaesthetist covering City on-call will be responsible for anaesthetising the child. They may request help from BMEC on-call anaesthetist.

Paediatric Ophthalmology advice

For clinical advice following review of a child in BMEC ED, initially contact the 2nd on-call ophthalmology registrar or paediatric ophthalmology fellow. If further specialist paediatric ophthalmology advice is required, Mr Ghauri can be contacted by phone between 9am-5pm Monday to Friday via SWBH switchboard.

When Mr Ghauri is on leave, the Birmingham Children's Hospital consultant team can give clinical advice for SWBH children within the following framework:

a) 9am-5pm Monday to Friday, advice-only service
b) When Mr Ghauri is on leave
c) On a consultant to consultant basis
d) Duty of care remains with the SWBH consultant
e) Queries are made to the Orthoptist in Charge 0121 3339467 to direct the call

General principles when assessing children

1. Examining children in the presence of their carers can appear intimidating
2. However, children are more scared of the clinician and clinical environment
3. Speak to the child, engage family, exude confidence, make it a game
4. Ask carers to play videos or games on smartphones
5. Target examination to history and presentation
6. Order of assessment:
    a. Vision
    b. Motility
    c. Use direct ophthalmoscope to check pupillary responses and red reflex
    d. Portable slit lamp
    e. iCare
    f. Dilate and carry out fundus examination (if co-operative, this can be done on a slit-lamp with 90D, if this is not possible use an indirect with 20 or 28D lens).
7. **If appears photophobic, instil proxymetacaine**

8. If Child does not cooperate with examination, consider repeating examination after child has had a break/ has been fed or is asleep. If necessary attempt restrained examination following discussion with parents.

9. If on observation child appeared comfortable and demonstrated good visual behaviour, white eyes and a clear red reflex seen, examination can be deferred.

10. **If there is a suspicion of trauma, corneal ulcer or child appears to be in significant pain/photophobia, examination must be sufficient to establish a diagnosis. If examination is insufficient, child will require an EUA to be organised as an emergency via the on-call team.**

Safeguarding children

https://connect2.swbh.nhs.uk/safeguarding/child-safeguarding/

Safeguarding children is an essential consideration when assessing any child attending ED.
All clinicians in Eye ED required to be up to date with Safeguarding Level 2 training.

General considerations in safeguarding
Types of abuse:

1. ***Physical*** – includes hitting, shaking, chemical injury, poisoning, cigarette burns
2. ***Emotional*** – persistent psychological ill-treatment or verbal abuse
3. ***Sexual*** – inappropriate physical contact or exposure to adult material
4. ***Neglect*** – failure of a child's carer to meet their physical and/or emotional needs. This may include inappropriate clothing, failure to provide food, failure to bring the child to hospital when required

In cases of suspected domestic violence always consider and ask whether there are children in the family – if children are in the household, this could be a child safeguarding issue.

If you are concerned that a child or young person is at risk of harm, please discuss with the consultant on-call, senior nurse in eye casualty and the general paediatric registrar in call.

Important contacts:

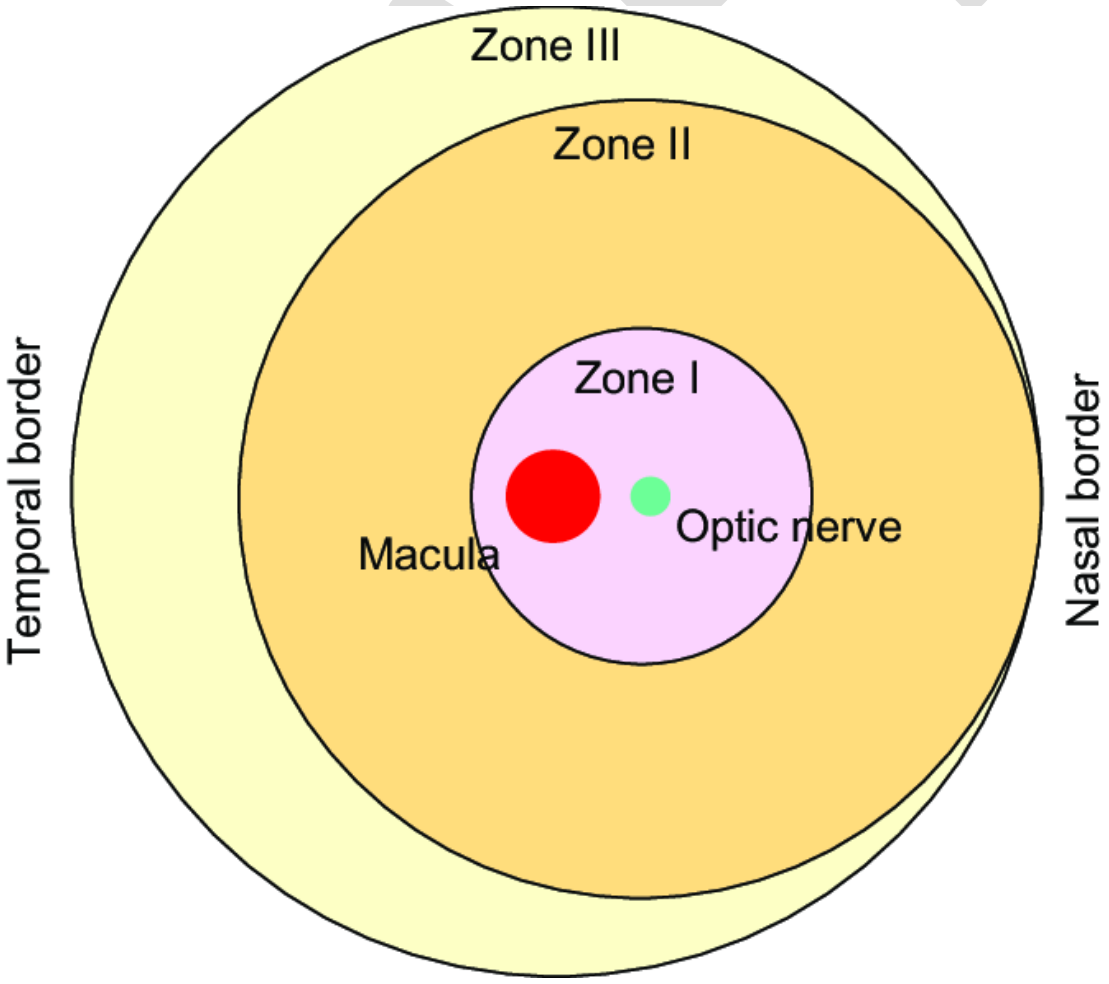
- Safeguarding Office Contact Telephone Number: 0121 507 2844 (Monday – Friday 9-5pm)
- Sandwell Children's Social Care Referral Telephone Number: 0121 569 3100
- Birmingham Children's Social Care Referral Telephone Number: 0121 303 1888
- Safeguarding children lead nurse Jayne Clarke – 07964039019 or via IVOR
- Named doctor for safeguarding children Dr Gaurav Popli – mobile via switchboard

Request for examination of children < 3 years with suspected Non-Accidental Injury

Examine child within 24 hours by the most senior doctor in Eye ED or the 4th on-call

Assess for

- Any signs on face, adnexae/lids and anterior segment of abnormality or injury
- Pupil reactions including RAPD
- Dilated fundus examination using an indirect ophthalmoscope with a 20 or 28 or 30 Dioptre lens
    - Location of haemorrhages (use of ROP zones is helpful)
    - Layer(s) of retinal bleeding
    - Extent of haemorrhage (mild, moderate, severe)
    - Macular schisis and/or retinal folds
    - Optic discs (normal or swollen)



If a child has no ophthalmic signs of abusive head trauma no further action needs to be taken.

If retinal haemorrhages or other abnormal ocular findings identified

- Findings to be documented on the RCOPhth proforma. *https://www.rcophth.ac.uk/wp-content/uploads/2014/12/2013-SCI-293-Appendix-3-Recording-Ophth-features-of-suspected-paediatric-head-trauma.pdf*
- Child should be reviewed by a consultant paediatric ophthalmologist within 72 hours

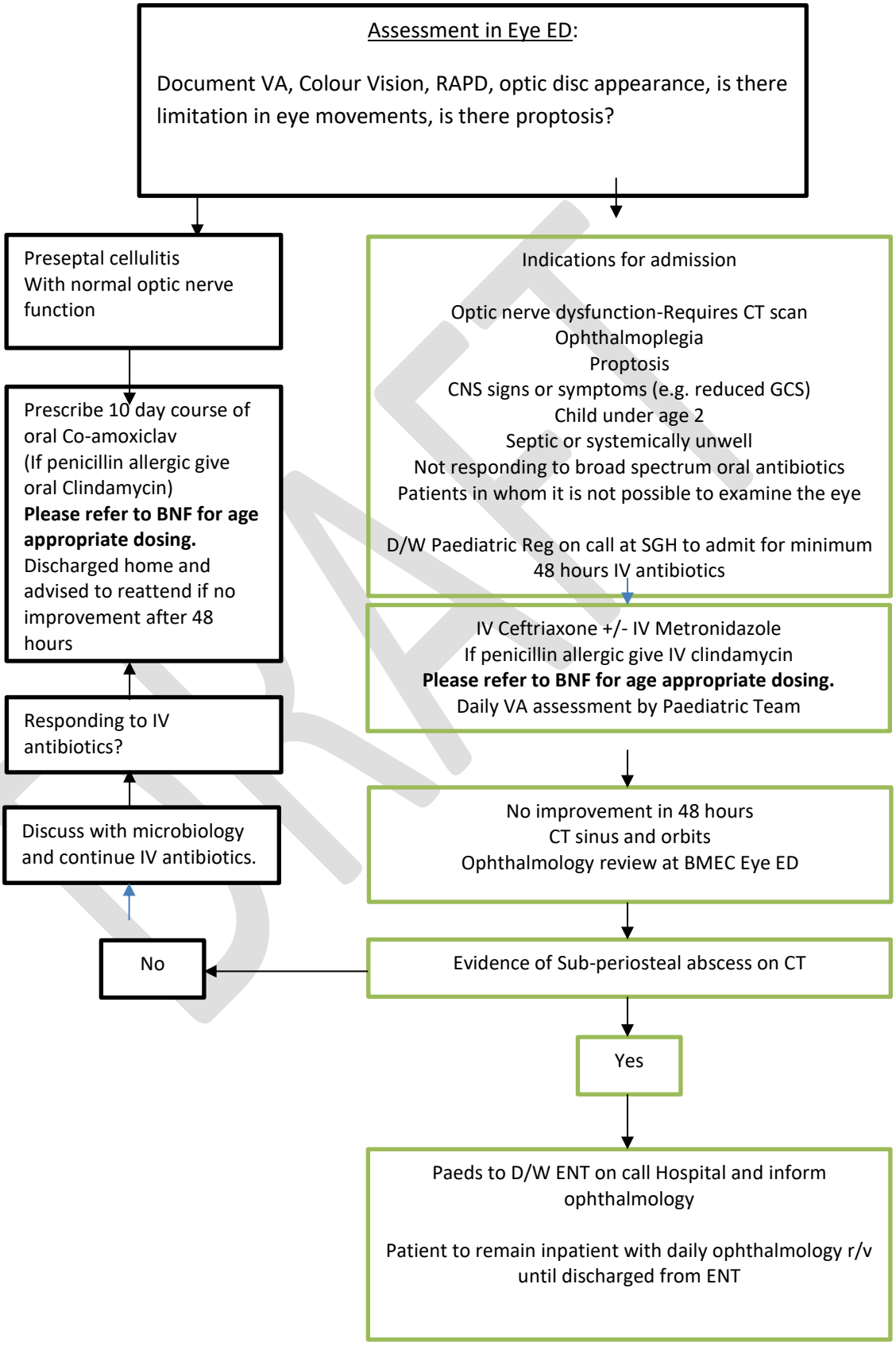
Communicate findings (positive and negative) to paediatric medical team.

If unexplained retinal haemorrhages are identified for the first time by any member of ophthalmic staff, NAI should be considered and the procedures followed as in the Child Protection Policy.

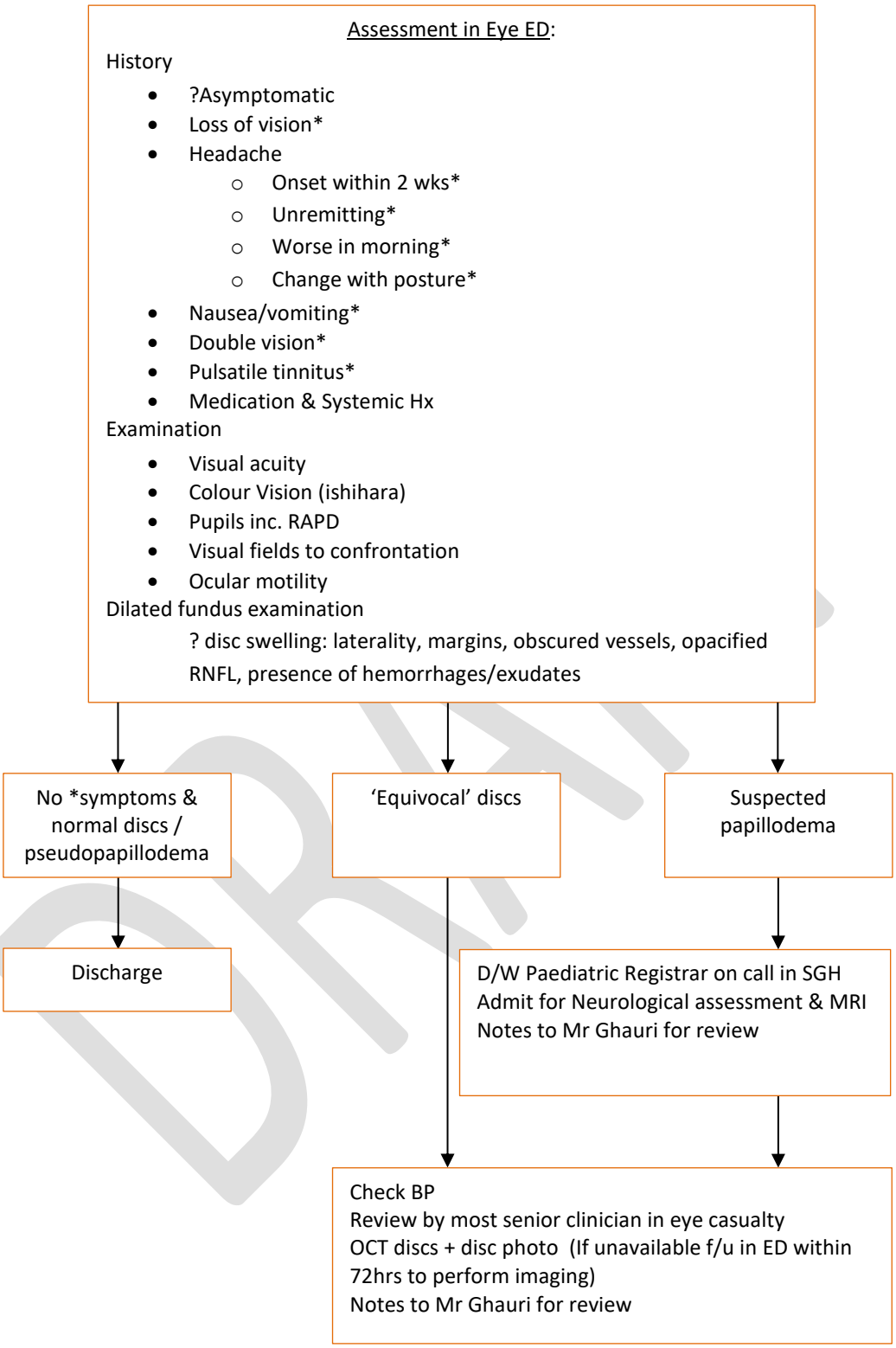
Post-mortem fundal screening examinations in SUDI (sudden unexplained death in infants) should not be performed by ophthalmology, this will be carried out by specially trained pathologists.
https://www.rcpath.org/uploads/assets/874ae50e-c754-4933-995a804e0ef728a4/Sudden-unexpected-death-in-infancy-and-childhood-2e.pdf

Advice for specific conditions

Management of preseptal/orbital cellulitis



Suspected Bilateral Disc Swelling



Paediatric External Eye Disease

Principles of treatment

1. Establish correct diagnosis- BKC vs VKC
2. Prescribe effective treatment
3. Simplify drop regime
4. Lubricants do not treat underlying condition
5. Discharge to GP unless evidence of sight threatening complications or disabling symptoms

BKC	**VKC**
Foreign body sensation	Itchiness
Anterior &/or posterior blepharitis	Stringy discharge
Inferior punctate erosions	Superior punctate erosions
Diffuse conjunctival hyperaemia	Tarsal/limbal papillae
Marginal keratitis	Shield ulcers

Blepharitis/Blepharokeratoconjunctivitis

Key symptoms
Foreign body sensation
Crusting of lashes
Worse in morning
Recurrent chalazia

Key signs
Posterior and/or lid margin disease
Inferior corneal punctate erosions
Chalazia
Marginal keratitis
Corneal vascularisation

Management

Mild	Reassurance + dietary omega 3 + warm compress and lid cleaning
Moderate	g. Betamethasone 3x daily 2-4/52 Chloramphenicol ointment twice daily 4/52 to lid margins 6/52 of Erythromycin suspension/doxycycline according to age (see below) 2-7 years: Erythromycin 125mg twice daily 7-12 years: Erythromycin 250mg twice daily 12+ years: Doxycycline 100mg once daily or Erythromycin 500mg twice daily
Severe	g. Dexamethasone 0.1% preservative free 4x daily 4/52 + antibiotics as above

Criteria for referral to paediatric ophthalmology:

- Corneal neovascularization
- Severe marginal keratitis
- Microbial keratitis
- >/= 2 flare ups following completed course of erythromycin / doxycycline

Chalazion

- Document onset of chalazion and previous episodes
- Isolated chalazia: Reassure that all chalazia resolve spontaneously albeit on unpredictable timescale & discharge
- Recurrent chalazia ± BKC symptoms: Treat as for moderate blepharitis & discharge
- Infected chalazion: 7 days Oral Co-Amoxiclav (see BNF for age appropriate dosing) + treat as for moderate blepharitis
- Do not refer from Eye ED for I&C.
- Advise GP to refer only if chalazion has been present > 1 year

Marginal Keratitis

- G. Betamethasone x3 daily 2-4/52
- Treat as per moderate blepharitis
- If epithelial defect present add g. Chloramphenicol 0.5% QDS 7/7
- Follow up: 2/52 in Modality or ED PCFU clinic

Allergic conjunctivitis

Key Symptoms

- ITCHING
- Seasonal vs perennial
- Associated atopic illness (eczema, asthma, food allergy, hayfever)

General advice

- Allergen avoidance e.g. wash hands after handling pets, avoid going outside when grass freshly mown, washing bedding and toweling

Acute allergic conjunctivitis

- Symptoms <24hrs
- Itching ± conjunctival hyperemia ±angioedema
- Treatment: **oral Loratadine** as per BNF

Seasonal/Perennial allergic rhinoconjunctivitis

- Itching ± conjunctival hyperemia
- No corneal involvement or conjunctival giant papillae
- Treatment: **g. Olopatadine twice daily (during allergy season e.g. throughout spring/summer months for hayfever) or g. Ketotifen twice daily + oral Loratadine** for mild flare ups
- Acute flare up: g. betamethasone x3 daily 2-4/52
  Refer to clinic if >2 flare ups despite good adherence to treatment

VKC Management						
	Bulbar conj	**Tarsal conj**	**Cornea**	**Limbus**	**Treatment**	**Follow up**
Mild	Hyperameia +	Micro=papillae	Clear	NAD	g. betamethasone x2/day 2/52 g. Olopatadine or g. Ketotifen x2/day oral Loratadine PRN	Discharge to GP
Moderate	Hyperaemia ++	Macro papillae < 1mm	Micro erosions	<180 deg inflammation	g. betamethasone x3/day 2-4/52 g. Ciclosporin 0.1% x2-3/day	Routine paeds
Severe	H.T Dots	Giant Papillae >1mm	Macroerosions Vascularisation+	>180 deg inflammation	g. Dexamethasone 0.1% PF x3day 2-4/52 g. Ciclosporin 0.1% x4/day	Paeds OPD <4/52
Sight-threatening	360 deg thickening	Coalesced Cobblestones	Shield Ulcer Vascularisation++	Diffuse gelatinous infiltrates	Remove at slit-lamp/in theatre g. Dexamethasone 0.1% PF 2-hourly g. Chloramphenicol 0.5% PF x2/day g. N-acetylcysteine x4/day Consider BCL If suspicion of infection, give g. Levofloxacin 2-hourly 48h prior to commencing steroid	F/U in ED + urgent paeds/cornea referral

Paediatric Uveitis-Provisional.

Encompasses the following in patients presenting before their 16th birthday :

Anterior uveitis, Intermediate uveitis, panuveitis – these usually persist into chronic disease requiring long term treatment

Posterior uveitis – usually a sign of systemic disease.

Scleritis

(Orbital inflammatory disease, once infection and neoplasia excluded.)

Initial Investigation

Important to exclude at presentation :

Masquerades	*Systemic illness*
Retinoblastoma	TINU
Acute / chronic endophthalmitis	SLE
Infectious focal retinochoroidtis (toxoplasmosis, TB)	Sarcoid
Leukaemia	
JXG	

Full eye examination

Ultrasound if full fundus examination including retinal periphery not possible

Full medical history + systemic enquiry.

FBC, ESR, CRP, U&E creat.

Management

Topical steroid – Predforte 1%

Mydriasis - Atropine 1% once day, if required due to active synechia development

Outcome - email (bwc.eyedepartment@nhs.net) and referral to Paediatric uveitis team BCH within 24 hours.Provide BCH contact details to family (**********) and advise to contact if no communication within 10 days.

Supply BCH Paediatric Uveitis leaflet.

Please arrange initial follow up in BMEC depending on severity + 1 month maximum at Wednesday morning BCH Paediatric uveitis MDT clinic will be organised by BCH.

Acute Onset Squint

1. Detailed history including: age, onset, vision, diplopia, head position, refraction, family history, previous eye surgery/amblyopia, developmental milestones, medical problems
2. Examination including motility and slit lamp
3. Organise Orthoptic review from Eye A&E
4. Urgent neuroimaging + neurological assessment under paediatrics if suspicion of cranial nerve palsy or secondary cause (e.g. tumour, trauma, intracranial infection)
5. Follow up in orthoptic or paediatric ophthalmology clinic

Medically Unexplained Visual Loss

1. This is a diagnosis of exclusion in a child with apparently reduced vision, but an absence of positive clinical findings
2. Check VA at standard distance, 1m and near
3. Ishihara, visual fields, pupils including RAPD, dilated fundus exam, refraction, try neutralizing lens and/or tests of stereopsis
4. Discuss with orthoptics
5. If normal vision demonstrated in ED discharge to GP

General Bacterial/Viral Conjunctivitis

1. Default is to discharge patients with advice on cold compress and lid hygiene
2. Consider g. Chloramphenicol 0.5% 2-hourly if purulent discharge. Can taper down after 48 hrs
3. Consider g. Softacort or g. Prednisolone 0.5% 4x daily for subepithelial infiltrates
4. Advise to return to Eye casualty if symptoms worsening

Neonatal conjunctivitis

1. Swab for chlamydia, bacteria, PCR for herpes
2. Treatment Chloramphenicol 1% 4x daily 7/7
3. Consider Chlamydia if purulent discharge & prescribe oral Erythromycin 12.5mg/kg 4x daily 2/52
4. Hyperacute purulent discharge to be treated as gonococcal
    a. Admit under paediatrics
    b. IV Cefotaxime 100mg/kg twice daily 5/7
    c. G. Cefuroxime 5% x6/day
    d. Concurrent treatment of chlamydia
5. Advise parents to attend GU clinic

Herpes Simplex Keratitis

1. Treatment with Ganciclovir 0.15% 5 times a day until complete corneal re-epithelialisation. Then 3 instillations a day for 7 days after healing. The treatment does not usually exceed 21 days.
2. Follow up in PCFU 7/7.
3. Criteria for OPD referral: Age <7, scarring on visual axis (defined as the central 4mm zone), 2nd recurrence < 1 year

Congenital Nasolacrimal duct obstruction

White, quiet eye with no corneal changes. Some mild discharge, which is not purulent, and a watery eye with increased tear meniscus.

1. Reassure parents that 90% of cases resolve spontaneously by 1 year
2. Do **not** perform conj swabs or give antibiotics unless cellulitis or conjunctivitis
3. Do not refer to paeds clinic. Children >1 year- request GP to make routine paeds referral

Leukocoria

1. Determine if corneal, cataract or retina
2. Perform B-scan if no/poor fundal view
3. Cataract in infant <1 year refer directly to Birmingham Childrens Hospital (please print Medisoft letter in ED and liaise with administrative staff for urgent referral, inform the Paediatric Ophthalmology team via email as well)
4. Suspected retinoblastoma – refer directly to Birmingham Childrens Hospital (please print Medisoft letter in ED and liaise with administrative staff for urgent referral, inform the Paediatric Ophthalmology team via email as well)
5. Discuss all retinal detachments in children with VR fellow

Please refer to subspecialty guidelines for the following conditions

Corneal Emergencies
Unilateral Disc Swelling